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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/090,054	03/01/2002	Michael Fripp	2001-IP-004288	6736

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EXAMINER
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STEPHENSON, DANIEL P

ART UNIT	PAPER NUMBER
3672	

DATE MAILED: 06/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/090,054

Applicant(s)

FRIPP ET AL

Examiner

Daniel P Stephenson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 04 March 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-16 and 56-71 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 16 and 56-71 is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 March 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 3/4/05.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

1. Claims 1-6 and 8-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goodson, Jr. et al. '470 in view of Yezerky et al. Goodson, Jr. et al. '470 (Fig. 2) discloses a fluid control device for use in a string of tools in a borehole in which there is a housing (50), a piston (60), a MR fluid (66) and a magnetic assembly (68). The MR fluid is disposed within the housing and can be made to block flow through use of the magnetic assembly. The magnetic assembly is an electromagnet that generates a magnetic field when powered. When the MR fluid blocks flow it impedes movement of the piston. Total blockage of the flow stops the piston while partial blockage due to the fluid will slow movement of the piston, as is the nature of MR fluids. The release of a valve (56) is stopped while the MR fluid blocks the housing which in turn blocks the piston. Goodson, Jr. et al. '470 does not disclose that there is both a permanent magnet and an electromagnet in the magnetic assembly nor does it disclose that in the unpowered state there is a magnetic field. Nor does it disclose that the magnetic field acts substantially perpendicular to a pressure gradient. Yezerky et al. (Fig 2, col. 3 lines 25-41) discloses a control for an MR fluid in which there is both a permanent magnet and an electromagnet. The permanent magnet supplies a magnetic force to solidify the MR fluid in the unpowered state in which the magnetic field acts substantially perpendicular to pressure gradient. The electromagnet, when activated, will counter the magnetic force of the permanent magnet and allow the MR fluid to become fluid. It would have been obvious to one of ordinary skill in the

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art at the time the invention was made to use the activation system of Yezersky et al. with the apparatus of Goodson, Jr. et al. '470. This would be done so that power would not have to constantly be supplied downhole and a current would only be required when it was desired to activate the apparatus.

2. Claims 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burleson et al. in view of Yezersky et al. Burleson et al. (Fig. 4A and 4B, col. 8 line 54- col. 9 line 49) discloses a downhole tool in which there is a housing (94), a piston (104), and a transitional material (122). The transitional material is disposed within the housing and can be made to block flow. When the transitional material blocks flow it impedes movement of the piston. Total blockage of the flow stops the piston while partial blockage due to the fluid will slow movement of the piston, as is the nature of transitional materials. Burleson et al. does not disclose that the transitional fluid is an MR fluid nor does it disclose a magnetic assembly to activate the MR fluid. Nor does it disclose that the magnetic field acts substantially perpendicular to a pressure gradient. Yezersky et al. (Fig 2, col. 3 lines 25-41) discloses a control for an MR fluid in which there is both a permanent magnet and an electromagnet. The permanent magnet supplies a magnetic force to solidify the MR fluid in the unpowered state in which the magnetic field acts substantially perpendicular to pressure gradient. The electromagnet, when activated, will counter the magnetic force of the permanent magnet and allow the MR fluid to become fluid. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the activation system and MR fluid of Yezersky et al. with the apparatus of Burleson et al. This would be done to allow activation of the apparatus

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from the top of the borehole with a more reliable system that is electrically based as opposed to temperature based.

With regards to claim 7, the piston of the apparatus as disclosed is capable of being controlled to provide a time-control device. As this feature is an intended use of the piston, and does not provide further structural definition to the device it is of little patentable weight.

*Allowable Subject Matter*

3. Claims 16 and 56-71 are allowed.

*Response to Arguments*

4. Applicant's arguments filed 3/4/05 have been fully considered but they are not persuasive.

5. It is the assertion of the applicant that the Goodson document fails to disclose that varying the magnetic field can enable partial blockage and slow the piston. Examiner respectfully traverses this assertion. The applicant quoted a relevant passage from the Goodson document in which it states, "either highly viscous or solid when a small magnetic field is applied." This statement allows for a viscous state to be achieved, which would not stop the piston but would impede its progress.

6. In response to applicant's argument that Yezersky is nonanalogous art since it is for a closed system in a motor vehicle, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this

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case, the particular problem being addressed is the production of a magnetic field around an MR fluid. The Yezerky document has particular relevance in this are.

7. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

In the case of Goodson, Jr. and Yezerky, there is a reasonable expectation of success in the combination of these references since both deal with stopping the flow of MR fluid and using the system of Yezerky would lower the power cost to the user of the system of Goodson, Jr. Lowering the power cost of a wellbore is always an objective of one of ordinary skill in the wellbore art.

In the case of Burleson and Yezerky, there is a reasonable expectation of success in the combination of these references since both deals with stopping the flow of a transitional fluid. Using the system of Yezerky would allow the controller at the top of the wellbore to know exactly when the explosive assembly would go off instead of relying on measurements of temperature and depth. It is common knowledge to one of ordinary skill in the wellbore art that the activation of downhole objects is preferred to be done by an operator instead of a variable of the wellbore that may change.

8. In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on

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obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

9. It is the assertion of the applicant that the combination of Burleson and Yezersky fails to teach "partial blockage of the flow of magnetorheological fluid through said housing by a magnetic field slows movement of said piston." The examiner respectfully traverses this assertion. It is an inherent feature of the invention that this will occur if a MR fluid is used with an electromagnet as an activator. The fluid as well as the field will go through a transitional period between states of viscosity and strength as the electromagnet is powered and unpowered.

### *Conclusion*

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel P Stephenson whose telephone number is (571) 272-7035. The examiner can normally be reached on 8:30 - 5:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David J. Bagnell can be reached on (571) 272-6999. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



David Bagnell  
Supervisory Patent Examiner  
Art Unit 3672

DPS 7/17